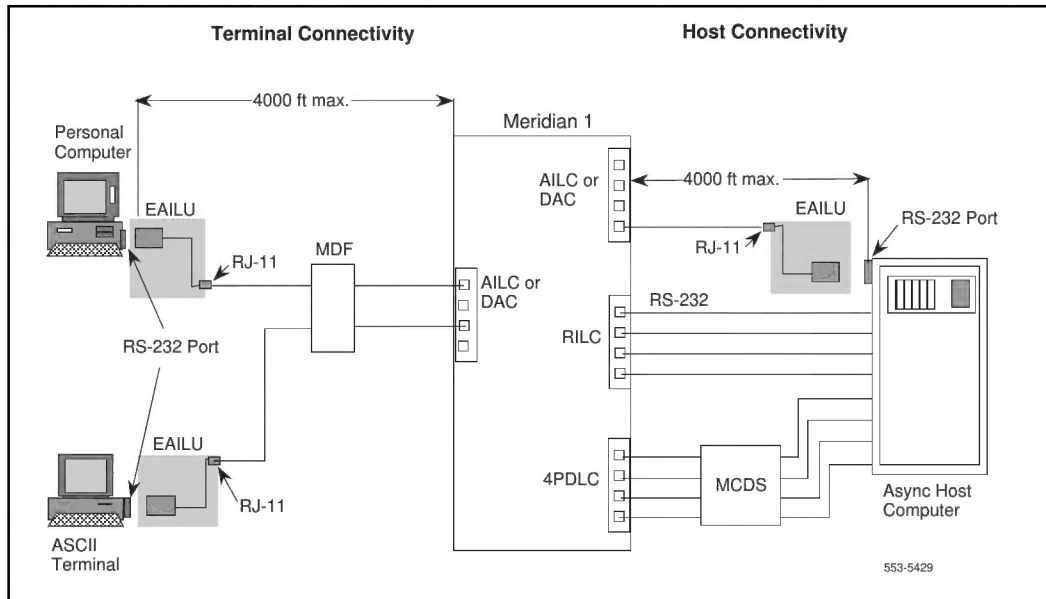

Description

The Enhanced Asynchronous Interface Line Unit (EAILU) is a compact Electronics Industry Association (EIA) RS-232 to RS-422 cable line driver that provides terminal and host connectivity to Meridian 1. With terminal connectivity, the EAILU allows RS-232-C compatible data terminal equipment (DTE) such as ASCII data terminals, teleprinters, and personal computers to connect directly through an RJ-11 wall outlet to Meridian 1 to place and receive data calls. These data calls can use Meridian 1 features such as speed dial, auto dial, and ring again. All features are accessed from the terminal keyboard through menus and prompts. With host connectivity, the EAILU can also be used to connect directly to host computers at distances of up to 4000 ft from Meridian 1 using an asynchronous link.

Figure 1 illustrates how the following equipment is connected for data transmission between Meridian 1 and terminals and host computers.

- EAILU (A0344336, male version, and A0344337, female version) for terminal and host computer connectivity up to 4000 ft from Meridian 1.
- DAC (Data Access Card) used for direct RS-232 Asynchronous Host Connectivity and RS-422 for intelligent peripheral equipment (IPE) module connectivity in Meridian 1 options 21 through 71 and option 11 main and expansion cabinets.
- RILC (RS-232 Interface Line Card) for direct Asynchronous Host Connectivity. Refer to *QPC723 RS-232 Interface Line Card description, installation, and operation* (553-2731-106).
- MCDS (Multi-Channel Data System) for High-Density Host Connectivity.

Figure 1
EAILU application diagram



Related documents

For complete information concerning Meridian data features, refer to these documents.

QPC723 RS-232 Interface Line Card description, installation, and operation
(553-2731-106)

QMT21 High Speed Data Module description, installation, and operation
(553-2731-107)

QPC918 High Speed Data Card description, installation, and operation
(553-2731-108)

Meridian data features traffic engineering and configuration (553-2731-151)

Meridian data features operation and tests (553-2731-300)

NT7D16 Data Access Card description and operation (553-3001-191)

X11 input/output guide (553-3001-400)

X11 features and services (553-3001-305)

Note: For the purposes of this document, Meridian 1 refers to SL-1 ST, NT, RT, and XT machines as well as Meridian 1 system options 21, 51, 51C, 61, 61C, 71, and 81.

Compatible data terminal equipment (DTE) devices

DTE devices that have the following characteristics can be interfaced through an Enhanced Asynchronous Interface Line Unit (EAILU) to

- The Data Access Card (DAC) (NT7D16AA), which is housed in the intelligent peripheral equipment (IPE) module (NTED37) or Common Equipment/Peripheral Equipment (CE/PE) module (NT8D11) and supports connection of up to six EAILUs.
- The DAC, which can be housed in the main or expansion cabinet of a Meridian 1 option 11 system.
- The Asynchronous Interface Line Card (AILC) (QPC430), which can be housed in the peripheral equipment (PE) modules or shelves and connect up to four EAILUs. These PE modules/shelves are NT8D13 (PE module), QSD64, QSD65, QSD80, QSP35, and QSP36.

For Computer PBX Interface (CPI) application, use AILC (QPC430) vintage C or higher. For asynchronous host computer applications, use the Enhanced version EAILU, which must interface to AILCs (QPC430) vintage E or higher.

Mode	Full duplex (when connected to DAC or AILC)
Data type	ASCII
Signal format	Asynchronous Start/Stop
Bits	8, including a parity bit
Data rates	110, 150, 300, 600, 1200, 2400, 4800, 9600, and 19200 bps
Stop bits	Two stop bits for 110 bps One stop bit for all other speeds
Clock	Internal, +1% frequency tolerance
Signal level	5 V to 15 V dc (nominal)

Physical description

The Enhanced Asynchronous Interface Line Unit (EAILU) is a compact, high-impact plastic unit 2-1/4 in. (57 mm) long, 1-3/4 in. (44 mm) wide, and 1/2 in. (13 mm) high.

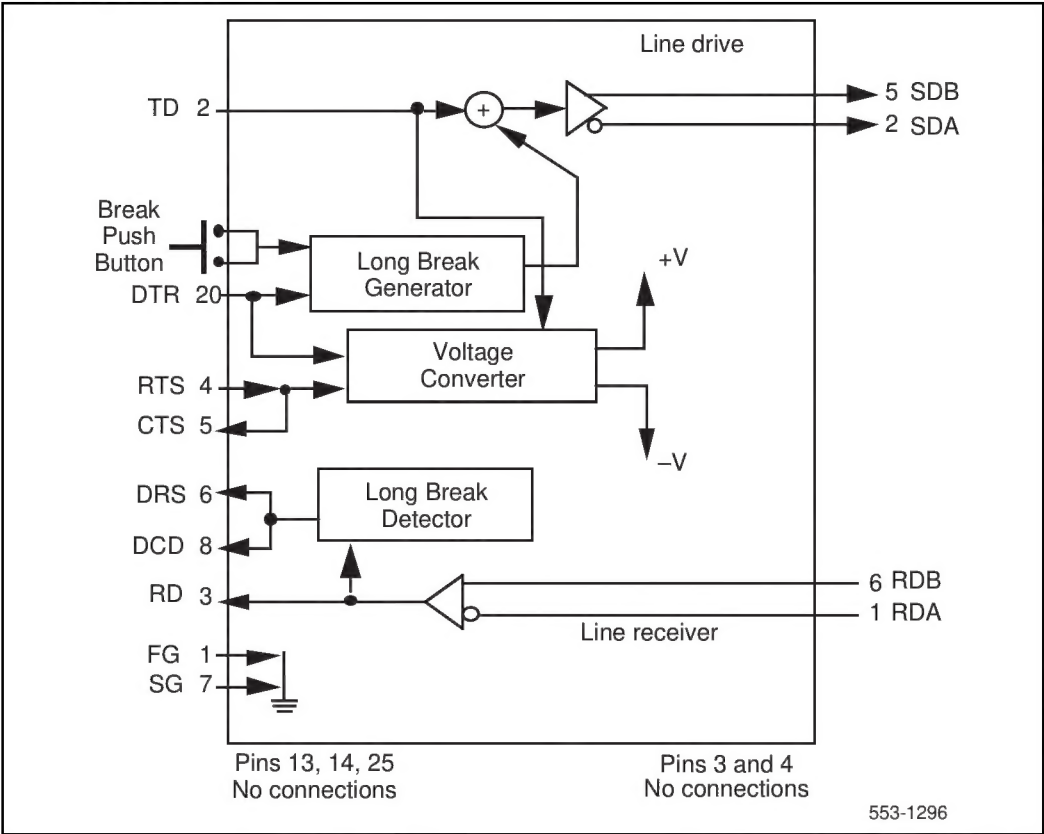
The unit is equipped with a connector to attach to the RS-232-C connector of the data terminal equipment (DTE) device and with a 7 ft (2133 mm), 4-conductor line cord that is terminated with a standard TELADAPT male plug to connect to an RJ-11 (or equivalent) jack. A push button located at the back of the unit is for long break generation purposes.

The EAILU allows control of near end call disconnect by the long break sent from the DTE device. Far end disconnect is indicated by a long break sent to the near end DTE. See [Figure 2](#) for a block diagram of the EAILU.

The EAILU has a long break detection feature that will toggle the DSR, DCD leads in the RS-232-C interface when the far end initiates a call disconnect.

The EAILU can generate a long break signal to the AILC or the DAC by either manually pushing the push button at the back of the unit, or dropping the Digitone Receiver (DTR) lead from the DTE device.

Figure 2
EAILU block diagram



The enhancements allow the following:

- a terminal that cannot generate a break to control the call disconnect by pushing the push button
- a host computer device that does not have the long break generation capability to control the call disconnect by dropping the DTR lead
- a host computer device that does not have the long break detection capability to detect the far end call disconnect through the dropping of DSR or DCD leads

CAUTION

After the call is dropped, DSR and DCD will drop momentarily and return to the on condition. The host may interpret that another call is established. Nevertheless, the host should not time out on the port; otherwise unpredictable results can occur.

The EAILU supports asynchronous data transmissions over loop lengths of up to 4000 ft (1200 m). Speeds are determined by the autobauding procedure of the AILC or DAC.

The EAILU connects directly to the DTE RS-232 connector (DB-25). See [Table 1](#) for EAILU pin assignment. The EAILU uses two-pair wires to connect to the AILC or DAC. There is no need to use an RS-232-C cable for the interconnection.

Table 1
EAILU DB-25 connector pin assignments

Pin number and description		EIA designation	CCITT	Description
1	PG	AA	101	Protective Ground
2	TXD	BA	103	Transmit Data from DTE
3	RXD	BB	104	Receive Data from DTE
4	RTS	CA	105	Request to Send from DTE
5	CTS	CB	106	Clear to Send to DTE
6	DSR	CC	107	Data Set Ready to DTE
7	SG	AB	102	Signal Ground
8	CD	CF	109	Carrier Detect to DTE
20	DTR	CD	108.2	Data Terminal Ready from DTE

Power requirements

There is no need for an external power source. The EAILU is powered from the RS-232-C connector of the connected DTE. When the DTE is turned on, 9 V dc (nominal) is applied to Pin 20 (DTR) and Pin 4 (RTS) of the RS-232-C connector.

Maintenance

The EAILU is a passive device that requires no preventive maintenance. There are no diagnostic programs, switches, configuration options, or straps associated with it.

If no response is received from the AILC or DAC, the user should ensure that the DTE is powered up, properly connected to the EAILU, and ready for data transmission with the proper speed and other parameters correctly set up.

If a unit is suspected to be faulty, replace it with a known working unit. Further failure indicates that the problem may be caused by Main Distribution Frame (MDF) cross-connection or the AILC or DAC line card.

Field repair of a defective unit is not recommended. The defective unit should be disposed of according to local instructions or returned for replacement if still under warranty.

Specifications

Environmental

The EAILU operates within the following environmental limits:

Operating temperatures	0°C to +50°C
Storage temperatures	–10°C to +70°C
Humidity	5% to 95% RH noncondensing

Electrical

The EAILU conforms to the following electrical specifications:

RS-422 line interface baud rates	up to 19200 baud
Line length	4000 ft (1200 m) using 26-gauge cable
RS-232-C port interface voltage level at receiver output points RD, DSR, DCD	4 V ± 1 V (nominal)

CAUTION

Vintage A or B of the QPC430 AILC will operate at up to 2500 ft (762 m).

Timing requirements

The following lists the minimum DTR turn off, break, and drop times for the EAILU:

Minimum DTR pin turned off time to generate a 1.5-second break signal (see Figure 3)	150 ms
Minimum break time in the line to activate the break detector	1.6 seconds
DSR, DCD drop time after detecting a long break (see Figure 4)	400 ms (typical) 100 ms (minimum)

Figure 3
Long Break generation by means of DTR drop

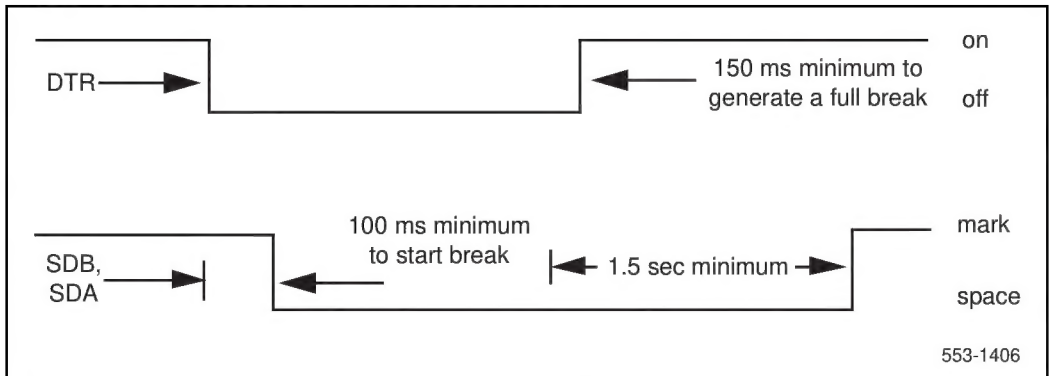
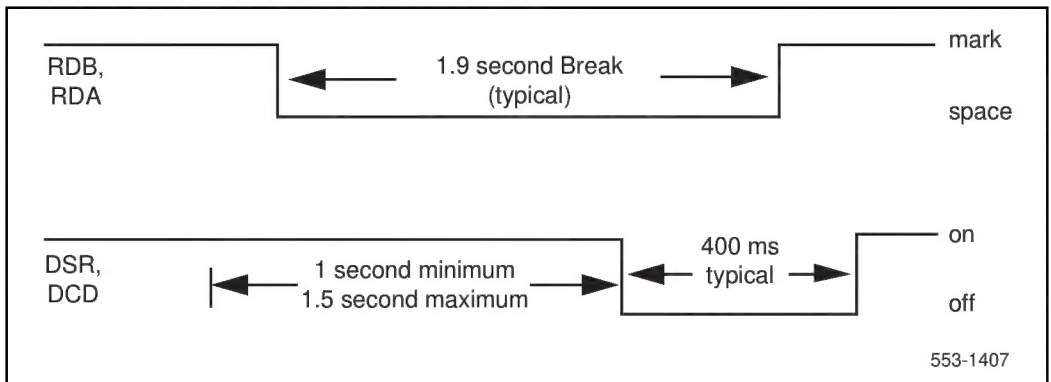


Figure 4
DSR, DCD control by means of break detect



Ordering information

The EAILU can be ordered with either a male or a female DB-25 connector. See **Table 2** for terminals that pass the qualification test. Specify the following information when ordering:

- EAILU with male connector
 - CPC number: A0344336
 - Engineering code: NPS 50705-L1
 - Model Number: M232-422A
- EAILU with female connector
 - CPC number: A0344337
 - Engineering code: NPS 50705-L2
 - Model Number: F232-422A

Table 2
Terminals that pass the qualification test

Manufacturer	Model
Digital Equipment	VT100 VT102 VT220
Data General	D-200 D-400
Hewlett-Packard	HP 2392A HP 2621A HP 2622A HP 2693A
Falco	Fame II TS-28 TS-1
Wang	2110
Wyse	WY-85
Qume	108
Zentec	Zephyr
Prime	PST-100
IBM PC	Async Comm Adaptor
AST Research Inc.	AST Multifunction Card